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1. (Withdrawn) A process for separating uranium and transuranic metals from spent metallic nuclear fuel and refining the uranium to its metallic state, the process comprising:

a) continuously transporting spent fuel to and through a molten electrolyte salt bath;

b) oxidizing the transported uranium and transuranic metals at an anode;

c) reducing the oxidized uranium ions to metallic uranium at a cathode; and

d) removing the metallic uranium from the cathode.

2. (Withdrawn) The process as recited in claim 1 wherein the cathode is immersed in the molten electrolyte salt bath.

3. (Withdrawn) The process as recited in claim 1 wherein the cathode comprises a right cylindrical drum horizontally mounted in the containment vessel

4. (Withdrawn) The process as recited in claim 1 wherein the anode comprises a containment vessel, the spent fuel, and a conveyor belt, wherein the conveyor belt is in close spatial relation to the containment vessel and to the cathode.

5. (Withdrawn) The process as recited in claim 4 wherein the conveyer belt is a segmented chain belt that contains perpendicular weirs.

6. (Withdrawn) The process as recited in claim 1 wherein the molten electrolyte is comprised of a eutectic mixture of lithium chloride (LiCl) and potassium chloride (KCl) salts, and uranium chloride (UCl_3).

7. (Withdrawn) The process as recited in claim 1 wherein there is electrical communication between the anode and cathode via the electrolyte.

8. (Withdrawn) The process as recited in claim 7 wherein the electrolyte facilitates the

electrical communication.

9. (Currently Amended) A device for electrorefining uranium and other metals contained in spent metallic nuclear fuels, the device comprising:

a) ~~a means for oxidizing the uranium and other metals~~ a hopper positioned above a first containment vessel and having a means of passage to the containment vessel;

b) ~~a means for continuously transporting spent metallic nuclear fuel to the oxidizing means~~ a first anode comprising the first containment vessel, a segmented belt, segment connectors, shredded nuclear fuel, and a drive sprocket in electrical communication wherein the segmented belt transports the fuel between the first and a second containment vessel

c) ~~a means for reducing uranium (III), U^{3+}, ions while keeping the other metals oxidized~~ a first cathode comprising a cylindrical drum suspended within an annular space of the first containment vessel in ;

d) ~~a means for isolating the reduced uranium from the other metals; and~~ a first electrolytic salt bath contained within the first containment vessel in electrical communication with the first anode and cathode;

e) ~~a means for receiving inert material remaining after the oxidation and reduction~~ a second anode comprising the segmented belt and a second drive sprocket in electrical communication;

f) a second cathode comprising the second containment vessel;

g) a second electrolytic salt bath in electrical communication with the second anode and cathode;

h) a scrapper for removing elemental uranium dendrites from the first cathode; and

i) a receptacle for collecting the uranium dendrites.

10. (Currently Amended) The device as recited in claim 9 wherein the ~~means of transport of spent nuclear fuel to a site of oxidation is a~~ segmented chain belt in electrical communication with a containment vessel comprising:

a) a perforated segmented belt, a mesh screen resting on and contacting the fuel carrying side of the belt;

b) interlocking segment connectors which define weirs of the belt segments; and

c) bristle containing brush tip attached to the outer surface of the connectors and in electrical communication with an iner surface of the first containment vessel .

11. (Cancel) The device as recited in claim 9 wherein the means for oxidation of uranium metal and transuranic metals is an anode comprising:

a) a containment vessel;

b) an electrolytic salt bath residing in said vessel; and

c) the transport means.

12. (Currently Amended) The device as recited in claim 9 wherein ~~the means for reduction of~~ uranium (III), U^{3+}, ions ~~is a cathode in electrical communication with an electrolytic salt bath.~~ are reduced in the first anode, cathode, and electrolytic salt bath.

13. (Currently Amended) The device as recited in claim 9 ~~further comprising a means for cleaning the transport means~~, comprising a second salt bath adapted to receive the segmented ~~chain~~ belt for cleaning.

14. (Currently Amended) The device as recited in claim 9 ~~wherein the means for isolating the uranium is a mechanical scraping blade contacting the cathode, and~~ wherein the

~~blade~~ scrapper is situated remote from the electrolytic salt bath.

15. (Currently Amended) The device as recited in claim 9 wherein the ~~means of oxidation and the means of reduction~~ first anode and first cathode move in opposite directions.

16. (Currently Amended) The device as recited in claim 15 wherein the ~~oxidation means and reduction means~~ second anode and second cathode move simultaneously.

17. (Currently Amended) The device as recited in claim 9 wherein material comprising the ~~means of transport, means of reduction, and means of oxidation~~ anodes and cathodes is a heat tolerant material selected from the group consisting of low-carbon steel, ferritic stainless steel, stainless steel, and alloys thereof.

18. (Original) The device as recited in claim 14 wherein the scraper is made of a material selected from the group consisting of tool steel, silicon carbide, and tungsten carbide.

19. (Original) The device as recited in claim 17 wherein the melting point (mp) temperatures of the heat-tolerant materials are above the temperatures of the salt baths.

20. (New) The device as recited in claim 9 wherein an annular space is between the first cathode and the segmented belt to accommodate the build up of uranium.

21. (New) The device as recited in claim 9 wherein the segmented belt has the porosity to allow the uranium to migrate through the belt to the cathode.

22. (New) The device as recited in claim 9 wherein a fine mesh screen rests on top of the segmented belt to prevent noble metal fission products and spent fuel matrix from reaching the first cathode.

23. (New) The device as recited in claim 9 wherein a discharge receptacle is positioned under the segmented belt to receive debris.

24. (New) The device as recited in claim 9 wherein the reduction potential of the first anode and cathode is below the reduction potential of zirconium and noble metals.

25. (New) The device as recited in claim 9 wherein the temperature is below the melting points of zirconium and fission product noble metals.

26. (New) The device as recited in claim 9 wherein the reduction potential of the second anode and cathode is above the reduction potential of zirconium and the noble metals.